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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/082,207

02/26/2002

Ben-Chuan Du

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22204

7590

10/04/2002

NIXON PEABODY, LLP
8180 GREENSBORO DRIVE
SUITE 800
MCLEAN, VA 22102

EXAMINER

NGUYEN, LAM S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,207

Applicant(s)

DU ET AL.

Examiner

LAM S NGUYEN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

New corrected drawings are required in this application because:

FIG. 5: missing elements AND1-3, AND1-4, AND1-5;

FIG. 8, element 81: the word "generatino" should be "generation".

Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki et al. (US 6142598) in view of Fujita et al. (US 2002/0024558 A1).

Iwasaki et al. disclose a printing apparatus comprising a print head for scanning over a printing medium, the print head comprising at least one printing element

a timing device for generating a driving timing sequence (FIG. 9, element 107) by shifting a reference timing sequence (FIG. 9, element 105) with a value (FIG. 9, element 103); and

a driving device, in response to said driving timing sequence, for driving

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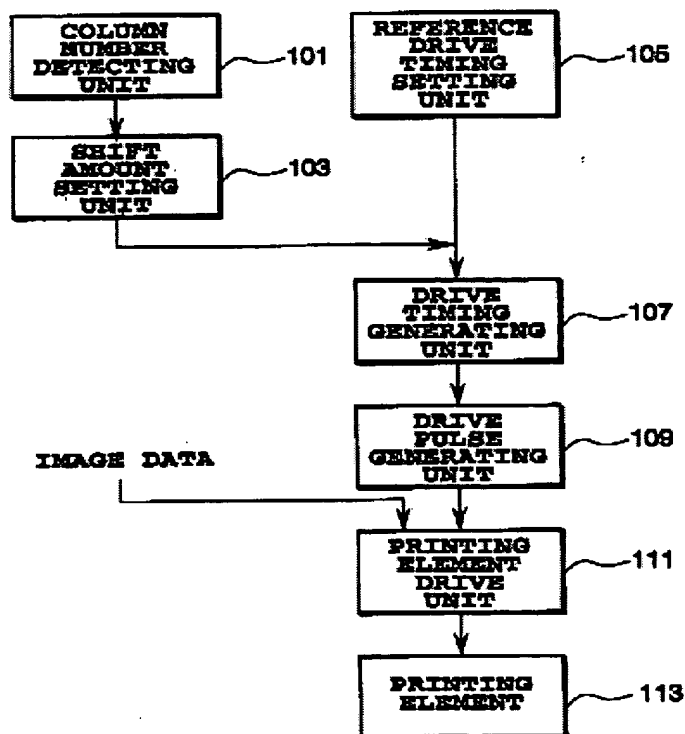
said printing element to form an image by printing dots on said printing medium (FIG. 9, element 109);

wherein, with the shifting of said reference timing sequence, a cyclic unevenness of said image is scattered (Abstract).

Referring to claims 2, 10: wherein said timing device generates the value by referencing to a value sequence (FIG. 9: the value sequence is generated by element 103).

Referring to claims 3, 11: wherein said timing device adds the value sequence to said reference timing sequence to generate said driving timing sequence (column 5, line 57-60).

Referring to claims 4, 12: wherein said timing device multiplies said random value sequence to said reference timing sequence to generate said driving timing sequence (column 5, line 12-26).



Referring to claims 7, 8, and 14: wherein said print head is an ink jet head to perform printing and wherein said printing elements are divided into multiple groups, said timing device generating a driving timing sequence for one group of printing elements by shifting the reference timing sequence with an amount (FIG. 5 and FIG 6).

Referring to claim 6: said timing device transmitting the value sequence via a transmission protocol (FIG. 9: element 107 transmits the driving timing sequence to element 109).

Iwasaki et al. do not disclose that the reference timing sequence is shifted with a random value sequence generated by a random sequence generator for providing a driving timing sequence (**Referring to claim 6**).

However, Fujita et al. disclose the method of shifting a reference timing sequence by a random value sequence generated by a corresponding random sequence generator to provide a driving timing sequence that is able to prevent a cyclic repetition of unevenness of a printing system (page 2, paragraph 0019). Also, it is inherent that a random value sequence is composed of a set of numbers in random order or value (**Referring to claims 5, 13**).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to replace the value sequence used for shifting the reference timing sequence to generate the driving timing sequence in the printing apparatus of Iwasaki et al. by the random value sequence as disclosed by Fujita et al. The motivation of doing so is to prevent the occurring of the cyclic unevenness in order to make difficult for recognizing visually the deteriorated image quality as taught by Fujita et al. (page 2, paragraph 0019).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kikuta et al. (US 6102510) disclose a printing apparatus including a selecting means that comprises a random data generating unit for generating initial selecting data which selects the enable bits at the start of recording of each line.

Syganuma et al. (SU 5065256) disclose a digital random number data produced by a digital random number data generator. Comprising a random number generating circuit based on the M-sequences coding theory.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BARLOW can be reached on (703)308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN

September 27, 2002


John Barlow
Supervisory Patent Examiner
Technology Center 2800